

S. M. Butcher

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THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. III.

FOR DECEMBER, 1843.

No. 12.

For the Southern Agriculturist.

SUGGESTIONS ON THE IMPORTANCE OF COLLECTING AND APPLYING THE VARIOUS MANURES TO AGRICULTURE.

AGRICULTURE is of vital importance to the prosperity and happiness of every nation on earth, and its advancement peculiarly important at this time to South-Carolina. As an increased knowledge of the various manures, of their various powers, of their formation, together with the means of collecting and applying them, are of the utmost importance to the prosperity of agriculture, we purpose to make some inquiries and suggestions on these subjects.

Of *Poudrette* we know but little in South-Carolina; it is believed to be a mixture of human feces, called *night soil*, with powdered animal charcoal, phosphate of lime and charcoal, by which the offensive smell, and other objections to its use, are entirely removed. The animal charcoal in this mixture is believed by a judicious writer on this subject, to be made by burning the earth in the city drains, and that earth found at the mouth of the common sewers where they discharge themselves into the docks. If so, two great nuisances would be removed from our city by its preparation, and much benefit result to agriculture from its general application to the land. The preparation of it in New-York is said to be a very profitable branch of business, and we wish some industrious man would make his fortune here, by the same means. Vegetable charcoal is abundant in the vicinity of Charleston, is a very powerful manure of itself, and by being mixed with the stimulating night soil, becomes much more so, while the offensive associations are effectually obviated. The quantity applied is 20 bushels to the acre, and its cost about 80 cents per bushel.

Guano, as it is called by the Peruvians, or *Huano* by the Spaniards, (the Spanish word for manure,) is found on the rocks and

in their crevices near the shores of the Pacific ocean, and is believed to be the focus of immense flocks of sea birds, which roost there every night.

The Peruvians have used it for manure many hundred years, and the British writers who have tried it, say that it is the strongest and the cheapest that they know of. The price in England is about £10 per ton, or about \$2 25 per 100 lbs. and the quantity applied to each acre, according to the article cultivated, varies from 125 to 300 lbs. Dr. Ure has analyzed it and finds 70 per cent. of it to be soluble in water. Its impurities are trifling, and it is found to be chiefly composed of phosphate of ammonia. The phosphates and other combinations of ammonia are among the most powerful agents of nature in promoting the growth of vegetables. Poudrette consists chiefly of phosphate of ammonia, and hence its similarity in power to the Guano or the deposit of birds in Peru.

The following scale of relative powers in different manures, is derived from the experiments of Europeans.

Guano or phosphate of ammonia, solid.
 Poudrette do. do. mixed with charcoal.
 Ammoniacal liquor from gas works.
 Sulphate of ammonia.
 Sulphate of Lime or Gypsum.
 Soot, or ammonia and charcoal.
 Nitrate of soda.
 Nitrate of potash or salt petre.
 Bone dust or phosphate of lime.
 Urine or phosphate of ammonia, liquid.
 Remains of, and powder of shells.
 Wood charcoal.
 Lime from gas works.
 Marl or carbonate of lime.
 Quick lime.
 Wood ashes.
 Poultry manure.
 Hog-pen do.
 Stable do.
 Cow-pen do.
 Decayed straw, stubble, and other vegetable matters.

The high rank of wood coal in this list, will account for its being placed by "Arator" at the head of his list; much allowance should

be made for a difference in the rank of these manures, when we reflect on the differences which arise from various soils—temperatures, seasons, &c. Of these, the

Phosphate of ammonia.

Phosphate of lime.

Phosphate soda.

Phosphate of potash.

Sulphate of ammonia.

Nitrate of ammonia.

Nitrate of soda.

Nitrate of potash.

may all be obtained from dead carcasses, which are now not only a loss to the owner and to agriculture, but a nuisance to the inhabitants.

It is believed that if any farmer, or other person on Charleston Neck, would offer the draymen a small gratuity, a few cents for each carcass, he would obtain the supply sufficient for him to carry on an extensive, and very profitable manufacture of the most powerful manures, with no more smell about him than usually exists in a farm-yard, probably not as much. All animal substances contain phosphoric acid and ammonia in much larger proportions, than are found in any of the few species of vegetables in which it is discoverable. Ammonia is, when purified, known as smelling salts, volatile alkali, hartshorn, &c. When disengaged by putrefaction from a carcass, it is that very offensive smell which taints the surrounding atmosphere.

We make no estimate of what may be saved from the fat carcasses which are sometimes carried out in the sale of horns, hides, hoofs and tallow, for which ready money may be always obtained. We pass on to propose that a *vat* should be made with flooring boards about 8 or 10 feet square, that about 20 or 30 bushels of ashes be thrown into the bottom of it, and the carcass laid upon it, and 20 or 30 bushels of fresh lime thrown over the carcass. If the lime be newly slacked from fresh stone lime, it is believed to be in the best state for acting on the animal's flesh. The fluids will fall, run down and mix with the ashes, forming phosphate of potash; if the sea weeds, marsh-grass, sedge, wild lavender and other vegetables growing in and near the salt-water be burnt to ashes, and used instead of wood ashes, the product will be phosphate of soda.

If marl be first thrown in, the product would be phosphate of lime. Some fumes will probably escape from the putrescent mass; these fumes being ammonia, may be arrested and neutralized and converted into manure. If powdered charcoal be thrown over the lime it will absorb most of the ammonia; and if offensive fumes still arise, cover the mass completely with grass roots and other trash, and keep it damp by occasionally sprinkling it with diluted sulphuric acid. This I propose should be mixed in a demijon or jug having 4 gallons of water in it, but capable of holding another gallon. Into these 4 gallons of water pour slowly and gradually about 1 lb. of sulphuric acid, stirring the water with a stick, after each addition of the acid, as a considerable heat will be occasioned by the mixture. This quantity it is supposed will be quite sufficient for each carcass to prevent any loss of ammonia or escape of putrid effluvia from it, and will form sulphate of ammonia intermixed with the stubble or grass roots. The sulphuric acid would only cost $12\frac{1}{2}$ cts. the 30 bushels of ashes and cartage \$4 00; the 30 bushels of lime and cartage \$6 00; labor \$2 60;—total, \$12 $12\frac{1}{2}$. With this we have to compare the probable value of the products—

30 bushels phosphate of potash, at 80 cts.	-	\$24 00
30 bushels phosphate of lime, at 80 cts.	-	24 00
100 lbs. sulphate of ammonia, at 2 cts.	- -	2 00
20 bushels bone dust, (less the pounding) at 20 cts.		4 00
		<hr/>
		\$54 00

These estimates are supposed to be correct, but they may be otherwise; the only object in giving them is to afford some outline for such estimates. If a man can make 40 or 50 dollars on each carcass, increase the productions of his own farm, and remove a public nuisance, he will not repent the undertaking.

The bones of all dead animals are well known to be in great demand as manure in Great Britain, also when reduced to powder, that it is sold as bone dust, at about the rate of 56 cents per bushel, and in such quantities that a single district in Scotland is said to have paid for it \$50,000 in one year. That it is applied to the land in the proportions of from 10 to 20 bushels per acre generally, and that its fertilizing powers are so great, that it has resuscitated lands which had been for ages abandoned as worthless;

and that even the barren heaths of Scotland have, by the use of it, been converted into valuable wheat fields. Great quantities of bones are yearly sent to Great Britain, from the United States, almost entirely to be used as manure, and yet there are constantly tons of bones to be seen exposed on the commons north of Charleston. Throughout the State no one has attempted to save even a bone, for the purpose of manuring his crop, or of trying the experiment whether useful or not. We earnestly request that some two or more of the enlightened, enterprising farmers in the vicinity of Charleston, would in concert commence this preparation of manures from carcasses, and especially to powder the bones, and try its influence compared with other manures. It is said to be peculiarly valuable in cultivating turnips, the bone dust being sowed with the seed in drills.

The simple machinery for powdering plaster of paris (gypsum) will suit admirably for powdering bones. The pestles fall into a strong trough, the bottom of which is formed by bars of wrought iron, so near together that the fall of each pestle, will cause a sifting of the powder between the bars, as fast as it is formed: no screen or bolting cloth is necessary. Some quick-lime should be occasionally thrown into the trough, for the purpose of taking up the marrow or other substances which may render the mass glutinous, tough or tenacious; and when thus incorporated it will also become phosphate of lime as well as the bone dust.

If the carcass be suffered to putrify enveloped either in wood ashes, or those made by burning wild lavender, marsh grass, and such productions of salt-water, the results will differ from those when covered with lime. Nitrous acid will be generated by putrefaction which with wood ashes forms an impure saltpetre—nitrate of potash; and with the ashes of salt-water plants, form impure nitrate of soda, both of which are among the most powerful of manures. By putrefaction also a vast deal more of ammonia, will be disengaged from the carcass, but it may be intercepted and saved, by frequently sprinkling diluted sulphuric acid over it, as directed in the other case, and become sulphate of ammonia, highly valuable as a manure. If nitrous acid be used it will be nitrate of ammonia. If covered completely with powdered charcoal, the offensive fumes will be absorbed by it, and one of the most valuable of manures be produced.

Urine is an animal secretion of great value, and very much neglected:—large quantities of it may be collected from the livery stables, and obtained for a few cents per gallon. It is chiefly phosphate of ammonia, with a portion of uric acid in solution. It may be applied to the soil in its natural state, or incorporated with ashes, earth, stubble, roots, straw and any such substances to extend its usefulness. It applied to the roots of peach and nectarine trees, it is peculiarly valuable in restoring the health of the trees, and the flavor, size and quality of the fruit, where they have decayed, and increasing them when healthy. It has always been considered one of the most powerful of manures for all kinds of vegetation, and proves the efficiency of its constituent parts, phosphoric acid and ammonia.

Shells of every kind possess more or less of the phosphate of lime, as well as the carbonate, and are therefore believed to be better as manures, than the stone lime. They may be reduced to powder by the same simple machine recommended for powdering bones, and now generally in use for powdering gypsum, sulphate of lime, commonly called plaster of paris.

Charcoal unmixed, is believed to be a simple inert substance, not stimulating like the animal manures considered above. But it is invariably a constituent part of every vegetable that grows, and all require supplies of it as essential to their existence. Where vegetable remains containing charcoal, in its natural state, unpurified by fire, are exhausted from a field, the crops cease to prosper and cultivation is abandoned, until nature has again supplied the soil with vegetable remains, by the growth of grass and weeds, or until art and industry have provided the proper aliments for vegetation. We believe that the addition of charcoal to the above mentioned animal manures is essential to the success of every experiment made with them. Whether the charcoal be pure from the fire, or in a state of decaying vegetable matters cannot be very material, we believe it to be all important to the healthy productive growth of all crops. As well might it be expected that a man should be healthy and useful to his family, living solely on ardent spirits without suitable food, as for a plant to be healthy and mature its crop of grain &c. when stimulated by animal manure alone without a supply of vegetable matter, adapted to its nourishment by putrefaction, by the action of lime, or by fire in the state of powdered charcoal,

Where it cannot be readily obtained, green crops of oats, pea vines &c, should be provided and ploughed into the exhausted soils. Where not entirely exhausted, the spontaneous growth of dog-fennel should be turned in when the crops are laid aside in the summer; peas then may be sowed broad cast to afford another green dressing in the autumn; this may be followed by oats in the spring; and the oats be succeeded by potatoe slips in the summer. Some such rotation instead of exhausting, ameliorates the soil, and the addition of animal manures will be of most essential benefit to the produce of the crop.

Soot consisting of ammonia and charcoal, is a natural combination of these two very important agents in productive or profitable agriculture. It may be obtained in large quantities by offering a small gratuity to the chimney-sweeps for the trouble of delivering it at any given part of the city. In England the only compensation received for sweeping chimneys, is the perquisite of selling the the soot, and it promotes the interest of all the parties that the sweeper should have the soot, for the cleaner he sweeps your chimney the more soot will he have for sale. Offering to pay 12 or 15 cts. per bushel for soot, would probably return the farmer ten times the amount of his advances, in the greater productions of his crop.

A.

BOMMER'S MANURE—METHOD PUT IN PRACTICE.

Messrs. Gaylord & Tucker.

Being a subscriber and constant reader of your valuable agricultural publication, I frequently find there, articles on "Bommer's Method of making Manure." As these articles are chiefly from the pens of agriculturists who have followed this method with entire success, it affords me unfeigned pleasure to be able, on my own behalf, also to bear testimony to the value of this method, and through the medium of your paper, to make the results of my experiments and operations known to my fellow citizens. This I do, both for the sake of bringing before the public the great advantages derived from using the method spoken of, and the benefits insured me by its application, and at the same time in order to render a deserved tribute to the truth.

On purchasing Bommer's method last spring, I immediately prepared a heap in the presence of a few neighbors. I followed strictly the directions laid down in Bommer's book. After the lapse of a fortnight, the heap was opened in the presence of a

number of farmers, and our astonishment cannot be conceived on seeing the metamorphosis which had taken place, as we found all those weedy and stramineous materials of which the heap had been constructed, reduced to rich black manure, having an ammoniac smell, much more pungent than the best stable manure. Beholding so surprising a result, the farmers present formed themselves into a public meeting, and in that capacity nominated a committee from their midst, who were charged with the preparation of a Report of what we had seen, to be sent to the agricultural press.

I ploughed in this manure in to one half of a field intended for potatoes, and in order to institute a comparison of effects, I put the same quantity of my best stable manure into the other half of the field. The effect on the soil was very nearly the same with both these kinds of manure, but the vegetation on that part of the field which had been furnished with Bommer's manure, was more luxurious and the foliage of a deeper verdure, which I attribute to the richness of the saline matter which it contains, and which alone preserved the humidity of the soil during the severe drought of this last season. It is proper to remark also, that in the composition of the "Bommer's Manure," I employed simply such doses of the ingredients as were absolutely necessary to insure success in the operation of making it, and if I had increased these quantities, there is not the least doubt that the result of the Bommer manure would have been very far superior to that of any horse manure.

Perfectly satisfied with my experiment and its results, I have put up fixtures near my barnyard for the purpose of preparing large quantities of this manure; and within the last two months I have made three heaps, which have yielded me between 200 and 300 loads of excellent manure. The last heap was composed entirely of 100 loads of sedge grass, nearly dry, with which I intermixed 40 loads of swampy matter, such as exists on my farm. All my outlay in purchasing ingredients to form the lye for this last heap, amounted to between \$20 and \$30, and in disbursing this trifling sum, I have made a heap of manure, which I would not dispose of for \$250.

I shall prepare other heaps of manure before the winter sets in, and those who may be desirous to see me at work and to assure themselves of the truth of what I have said, need only call at my farm, and judge for themselves.

The benefits which I derive from using this method are not inconsiderable. Before becoming acquainted with it, I purchased every year from three to five hundred dollars worth of manure, which I needed over and above that of my own farm-yard, for the 200 acres which I have. Now I do not purchase one penny's worth, and I can make double the quantity if I choose. I have the advantage of producing my manure in the sowing and planting season. I can make it more or less strong, more or less fermented, so as to suit the soil and the kind of crop for which I want it; I

spread and plough it in while it is perfectly fresh, and consequently in all its strength. These are some of the results experienced by me in using Bommer's method of manuring land.

GERRET KOUWENHOVEN.

Flatlands, L. I., Sep. 15, 1843.

OF DRAINING AND ITS EFFECTS.

FROM LECTURES BY JAS. F. W. JOHNSTON, M. A., F. R. S.,

Among the merely mechanical methods by which those changes are to be produced upon the soil, that are to fit it for the better growth of valuable crops, draining is now allowed to hold the first place. That it is an important step in heavy clay lands, and that it must be the *first* step in all cases where water abounds in the surface soil, will be readily conceded; but that it can be beneficial also in situations where the soils are of a sandy nature—where the subsoil is light and porous—or where the inclination of the field appears sufficient to allow a ready escape to the water, does not appear so evident, and is not unfrequently, therefore, a matter of considerable doubt and difficulty. It may be useful, then, briefly to state the several effects which in different localities are likely to follow an efficient drainage of the land:—

1°. It carries off all stagnant water, and gives a ready escape to the excess of what falls in rain.

2°. It arrests the ascent of water from beneath, whether by capillary action or by the force of springs—and thus not only preserves the surface soil from undue moisture, but also frees the subsoil from the lingering presence of those noxious substances, which in undrained land so frequently lodge in it and impair the growth of deep-rooted plants.

3°. It allows the water of the rains, instead of merely running over and often injuriously washing the surface, to make its way easily through the soil. And thus, while filtering through, not only does the rain-water impart to the soil those substances useful to vegetation, which, as we have seen, it always contains in greater or less abundance; but it washes out of the upper soil, and, when the drains are deep enough, out of the subsoil also, such noxious substances as naturally collect and may have been long accumulating there—rendering it unsound and hurtful to the roots. The latter is one of those benefits which *gradually* follow the draining of land. When once thoroughly effected, it constitutes a most important permanent improvement, and one which can be fully produced by no other available means. It will be permanent, however, only so long as the drains are kept in good condition. The same openness of the soil which enables the rains to wash out those soluble noxious substances, which have been long collecting, permits them

to carry off also such as are gradually formed, and thus to keep it in a sound and healthy state; but let this openness be more or less impaired by a neglect of the drainage, and the original state of the land will again gradually return.

4°. This constant descent of water through the soil causes a similar constant descent of fresh air through its pores, from the surface to the depth of the drains. When the rain falls, it enters the soil and more or less completely displaces the air which is contained within its pores. This air either descends to the drains or rises into the atmosphere. When the rain ceases, the water, as it sinks, again leaves the pores of the upper soil open, and fresh air consequently follows. It is in fact sucked in after the water, as the latter gradually passes down to the drains. Thus, where a good drainage exists, not only is the land refreshed by every shower that falls—not only does it derive from the rains those important substances which occasionally, at least, are brought down by them from the atmosphere, and which are in a great measure lost where the waters must flow over the surface—but it is supplied also with renewed accessions of fresh air, which experience has shown to be so valuable in promoting the healthy growth of all our cultivated crops.

5°. But other consequences of great practical importance follow from these immediate effects. When thus readily freed from the constant presence of water, the soil gradually becomes drier, sweeter, looser, and more friable. The hard lumps of the stiff clay lands more or less disappear. They crumble more freely, offer less resistance to the plough, and are in consequence more easily and economically worked. These are practical benefits, equivalent to a change of soil, which only the farmer of stubborn clays can adequately appreciate.

6°. With the permanent state of moisture, the *coldness* of many soils also rapidly disappears. The backwardness of the crops in spring, and the lateness of the harvests in autumn, are less frequently complained of—for the drainage in many localities produces effects which are *equivalent to a change of climate*. “In consequence of the drainage which has taken place in the parish of Peterhead, in Aberdeenshire, during the last 20 years, the crops arrive at maturity ten or fourteen days sooner than they formerly did;”^{*} and the same is true to a still greater extent in many other localities.

7°. On stiff clay lands, well adapted for wheat, wet weather in autumn not unfrequently retards the sowing of winter corn—in undrained lands, often completely prevents it—compelling the farmer to change his system of cropping, and to sow some other grain, if

^{*} Mr. Gray, in the *Prize Essay of the Highland and Agricultural Society*, II., p. 171. This opinion was given in 1830, since which time many other extensive improvements have been made in that part of the Island.

the weather permit him, when the spring comes round. An efficient drainage carries off the water so rapidly as to bring the land into a workable state soon after the rain has ceased, and thus, to a certain extent, it rescues the farmer from the fickle dominion of the uncertain seasons.* To the skilful and intelligent farmer, who applies every available means to the successful prosecution of his art, the promise even in our age and country is sure—"that seed time and harvest shall never fail."

8°. But on lands of every kind this removal of the superfluous water is productive of another practical benefit. In its consequences it is *equivalent to an actual deepening of the soil.*

When land, on which the surface water is in the habit of resting, becomes dry enough to admit the labors of the husbandman, it is still found to be wet beneath, and the waters even in dry seasons, not unfrequently remain where the roots of the crops would otherwise be inclined to come. Or, if the surface soil permit a ready passage to the rains, and water linger only in the moist subsoil, still—though the farmer may not be delayed in his labors—the subsoil repels the approach of the roots of his grain, and compels them to seek their nourishment from the surface soil only. But remove the waters, and the soil becomes dry to a greater depth. The air penetrates and diffuses itself wherever the waters have been. The roots now freely and safely descend in the almost virgin soil beneath. And not only have they a larger space through which to send their fibres in search of food, but in this hitherto ungenial soil they find a store of substances—but sparingly present, it may be, in the soil above—which the long-continued washing of the rains, or the demands of frequent crops, may have removed, but which may have been all the time accumulating in the subsoil, into which the roots of cultivated plants could rarely with safety descend. It is not wonderful, then, that the economical effects of draining should be found by practical men to be not only a diminution in the cost of cultivation, but a considerably augmented produce also both in corn and grass; or that this increased produce should alone be found sufficient to repay the entire cost of thorough-draining in two or three years.

An obvious practical suggestion arises out of the knowledge of this fact. The deeper the drains, *provided the water have still a ready escape*, the greater the depth of soil which is rendered available for the purposes of vegetable nutrition. Deep-rooted plants,

* "Formerly," says Mr. Wilson, of Cumledge, in his account of the drainage of a farm in Berwickshire, "this part of the farm was so wet, that—though better adapted for wheat than any other crop—the season for sowing was frequently lost, and after an expensive fallowing and limeing, it was sown with oats in spring of which it always produced very poor crops. It is now so dry as to grow very good crops of turnip or rape, and except in two instances, I have always sown my wheat in capital order."—*Prize Essays of the Highland and Agricultural Society*, I., p. 243.

such as lucerne, often fail, even in moderately deep soils, because an excess of water or the presence of some noxious ingredient which deep grains would remove, prevents their natural descent in search of food. Even plants, which, like that of wheat or clover, do not usually send down their roots so far, will yet, where the subsoil is sound and dry, extend their fibres for three or more feet in depth, in quest of more abundant nourishment.

Not only, then, do deep drains permit the use of the subsoil plough without the chance of injury,—not only are they less liable to be choked up by the accumulated roots of plants which naturally make their way into them in search of water,—but they also increase the value and permanent fertility of the land, by increasing its available depth. In other words, that kind of drainage which is most efficiently performed, with a regard to the greatest number of contingencies, will not only be the most permanent, but will also be followed by the greatest number of *economical advantages*.

9°. Nor do the immediate and practical benefits of draining end with the attainment of these beneficial results. It is not till the land is rendered dry that the skilful and enterprising farmer has a fair field on which to expend his exertions. In wet soils, bones, wood-ashes, rape-dust, nitrate of soda, and other artificial manures, are almost thrown away. Even lime exhibits but one-half of its fertilizing virtue, where water is allowed to stagnate in the soil. Give him dry fields to work upon, and the well-instructed agriculturist can bring all the resources, as well of modern science as of old experience, to bear upon them, with a fair chance of success. The disappointments which the holder of undrained lands so often meets with, *he* will less frequently experience. An adequate return will generally be obtained for his expenditure in manuring and otherwise improving his soil, and he will thus be encouraged to proceed in devoting his capital to the permanent amelioration of his farm—not less for his own than for his landlord's benefit.

Viewed in this light, draining is only the first of a long series of improvements, or rather it is a necessary preparative to the numerous improvements of which the soil of islands is susceptible—which improvements it would be a waste of money to attempt, until an efficient system of drainage is established. And when we consider how great a national benefit this mere preparatory measure alone is fitted *directly* to confer upon the country, you will agree with me in thinking that every good citizen ought to exercise his influence in endeavoring, in his own district, more or less rapidly to promote it. It has been calculated that the drainage of those lands only, which are at present in arable culture (10 millions of acres,) would at once increase their produce by 10 millions of quarters of the various kinds of grain now grown upon them;—and that a similar drainage of the uncultivated lands (15 millions of acres) would yield a further increased produce of *twice* as much more. This increase of 30 millions of quarters is equal to nearly

one-half of our present consumption* of *all* kinds of grain—so that were it possible to effect at once this general drainage, a large superfluity of corn would be raised from the British soil.

This general drainage, however, cannot possibly be effected in any given time. The individual resources of the land owners are not sufficient to meet the expense,† and such calculations as the above are useful, mainly, in stimulating the exertions of those who have capital to spare, or such an excess of income as can permit them to invest an annual portion permanently‡ in the soil.

10°. He who drains and thus improves his own lands, confers a benefit upon his neighbors also. In the vicinity of wet and boggy lands the hopes of the industrious farmer are often disappointed. Mists are frequent and rains more abundant on the edges of the moor, and mill-dews retard the maturity, and often seriously injure the crops. Of undrained land, in general, the same is true to a less extent, and the presence of one unimproved property in the centre of an enterprising district, may long withhold from the adjoining farms that full measure of benefit which the money and skill expended upon them would in other circumstances have immediately secured.

So true is it in regard to every new exercise of human skill and in every walk of life, that we are all mutually dependent, every one upon every other; and that the kindly co-operation of all can alone secure that ample return of good, which the culture either of the dead earth or of the living intellect appears willing, and we may hope is ultimately destined, to confer upon our entire race.

11°. I would not here willingly neglect to call your attention to a higher benefit still, which the skillful drainage of an extensive district is fitted to confer upon its whole population. Not only is this drainage equivalent, as above stated, to a change of climate in reference to the growth and ripening of plants, but it is so also in reference to the *general health* of the people, and to the number and kind of the diseases to which they are observed to be exposed.

I may quote in illustration of this fact the interesting observations of Dr. Wilson on the comparative state of health of the laboring

* 65 millions of quarters. See an excellent paper on this subject in the *Quarterly Agricultural Journal*, xii., p. 505, by Mr. Dudgeon, of Spyelaw, in Roxburgshire, a county in which the practical benefits of draining have been extensively experienced, and are therefore well understood.

† To drain 25 millions of acres, at £6 an acre, would cost 150 millions sterling, a sum equal, probably, to the whole capital at present invested in farming the land.

‡ By an efficient drainage the soil is *permanently benefited*, but it is not so clear that the money it costs is *permanently invested* or buried in the soil. If the cost be repaid by the increase of produce, in three years, the money is not invested, it is only *lent* for this period to the soil. "I drain so many acres every year," said the holder of a large Berwickshire farm to me, "and I find myself always repaid by the end of the third season. If I have spare capital enough, therefore, to go on for three years, I can gradually drain any extent of land, by the repeated use of the same sum of money."

population in the district of Kelso during the last two periods of ten years. In his excellent paper on this subject, in the *Quarterly Journal of Agriculture*,* he has shown that fever and ague, which formed nearly one-half of all the diseases of the population during the former ten years, have almost wholly disappeared during the latter ten, in consequence of the general extension of an efficient drainage throughout the country; while, at the same time, the fatality of disease, or the comparative number of deaths from every hundred cases of serious ailment, has diminished in proportion of 4·6 to 2·59. Such beneficial results, though not immediately sought for by the practical farmer, yet are the inevitable consequence of his successful exertions. Apart, therefore, from mere considerations of pecuniary profit, a desire to promote the general comfort and happiness of the entire inhabitants of a district may fairly influence the possessors of land to promote this method of ameliorating the soil; while the whole people, on the other hand, of whatever class, ought "gratefully to acknowledge the value of those improvements which at once render our homes more salubrious and our fields more fruitful.

The practical benefits of draining, therefore, may be stated generally as follows:—

A. It is equivalent not only to a change of soil, but also to a change of climate, both in reference to the growth of plants and to the health of the population.

B. It is equivalent also to a deepening of the soil, both by removing the water and by allowing those noxious ingredients to be washed out of the subsoil which had previously prevented the roots from descending.

C. It is a necessary preparation to the many other means of improvement which may be applied to the land.

You will now be able to perceive in what way it is possible that even light and sandy soils, or such as lie on a sloping surface, may be greatly benefited by draining. Where no open outlet exists under a loamy or sandy surface soil, any noxious matters that either sink from above, or ooze up from beneath, will long remain in the subsoil, and render it more or less unwholesome to valuable cultivated plants. But let such an outlet be made by the establishment of drains, and that which rises from beneath will be arrested, while that which descends from above will escape. The rain-waters passing through will wash the whole soil also as deep as the bottom of the drains, and the atmospheric air will accompany or follow them.

The same remarks apply to lands which possess so great a natural inclination as to allow the surface water readily to flow away. Such a sloping surface does not necessarily dry the subsoil, free it from noxious substances, or permit the constant access of the air.

* Volume xii., p. 317.

Small feeders of water occasionally make their way near to the surface, and linger long in the subsoil before they make their escape. This is in itself an evil; but when such springs are impregnated with iron the evil is greatly augmented, and from such a cause alone a more or less perfect barrenness not unfrequently ensues. To bring such lands by degrees to a sound and healthy state, a mere outlet beneath is often alone sufficient.

It is to this lingering of unwholesome waters beneath, that the origin of many of our moor-lands, especially on higher grounds, is in a great measure to be attributed. A calcareous or a ferruginous spring sends up its waters into the subsoil. The slow access of air from above, or it may be the escape of air from water itself, causes a more or less ochrey deposit,* which adheres to and gradually cements the stones or earthy particles, among which the water is lodged. Thus a layer of solid stone is gradually formed—the *moor-land pan* of many districts—which neither allows the roots of plants to descend nor the surface water to escape. Hopeless barrenness, therefore, slowly ensues. Coarse grasses, mosses, and heath, grow and accumulate upon soils not *originally* inclined to nourish them, and by which a better herbage had previously been long sustained. Of such lands many tracts have been reclaimed by breaking up this moor-land pavement, but such an improvement, unless preceded by a skilful drainage, can only be temporary. The same natural process will again begin, and the same result will follow, unless an outlet be provided for the waters from which the petrifying deposit proceeds.

It ought to be mentioned, however, that where a ready passage and escape for the water is provided by an efficient drainage, and especially in light and porous soils, the saline and other soluble substances they contain will be liable, in periods of heavy rain, to be more or less completely washed out and carried off by the water that trickles through them. While, therefore, the establishment of drains on *all* soils may adapt and prepare them for further improvements, and may make them more grateful for every labor or attention that may be bestowed upon them—yet after drainage they must be more liberally dealt with than before, if the increased fertility they at first exhibit is to be permanently maintained or increased.

* If the water contain *sulphate* of iron, the air from above will impart to its iron an additional quantity of oxygen, and cause a portion of it to fall in the state of *peroxide*. If the iron or lime be present in the state of *bicarbonate*, the escape of carbonic acid from the water will cause a deposit of *carbonate* of iron or of lime. Any of these deposits will cement the earthy or stony particles together. Iron, however, is sometimes held in solution by an *organical* acid (*crenic*), which becomes insoluble, and falls along with the iron when the latter has absorbed more oxygen from the atmosphere.

For the Southern Agriculturist.

EXPENSES ON PREPARING RICE FOR MARKET,

From a report made to the Agricultural Society of South-Carolina, at its meeting in November last.

Mr. President.—The Standing Committee of this Society, on expenses incurred on introducing rice, cotton, corn and hay into market, submit a statement of the expenses on Rice.

The statement is predicated on shipment of 2000 bushels rough rice from Ashepool, Combahee, or Santee, to a Charleston mill; and takes for granted that 20 bushels will give a barrel of 600 lbs. nett, which is sold on the wharf for \$2½ per cwt; the planter paying every expense upon the produce.

Sale of 100 barrels of rice at \$2½ per cwt.	\$1,500	
do. barrels at - 50 cents each,	50	
		\$1,550 00
Expenses, freight to mill 2000 bushels at 6 cts. }	\$120 00 or 7½ p. ct.	
Freight to market from mill of 100 barrels, }	25 00 1½ "	
Furnishing 100 barrels at 87½ each, }	87 50 5½ "	
Landing and weighing 100 barrels at 10 cts. each, }	10 00 ½ "	
Coopering and Tareing, do. }	11 00 ¾ "	
Factor's Commis. 2½ per cent. on sale of \$1,550, }	38 75 2½ "	
Toll 9 p. ct. on \$1257 75, nett proceeds of sales, }	113 19 7½ "	
	\$405 44 26	\$405 44
Drawback on weighing, 4 lbs. }	½ p. ct.	
Turn of Scale in do. do. }	½ "	
Storage of one week, 8 cts. per barrel, }	½ "	
Leaking, &c. &c. - - - }	½ "	
		\$1,144 56
The percentage, therefore, on this sale of rice, 100 bbls. amounting in gross to - - - \$1,550 00		
Must be 26 per cent. or - - - - 405 44		
Leaving nett proceeds to the planter, - - -		\$1,144 56

If this 2000 bushels was sold in rough the relative price ought to be about 62 cts. per bushel, and would stand thus—

2000 bushels at 62 cts.	-	-	-	-	\$1,240 00
Freight to market 6 cts.	-			\$120	
Commissions on \$1,240 at 2½ per cent.			31		
					151 00
					<u>\$1,089 00</u>

According to particular proximities, freight may be less than 6 cents, and the planter, according to his facilities, may save of the above items, freight, tolls and barrels, but these are still worth to him the prices charged.

Your committee feel themselves bound to pursue their inquiries as to the charges still accumulating on this 100 barrels of rice, after its sale to the merchant. The merchant adds all expenses on purchase of an article, enhancing its cost before it reaches the consumer to the original value of the article, which in the purchase of a parcel of rice necessarily tends to lessen the price he could afford to pay the factor. The planter becomes, therefore, incidentally affected by such charges. Your committee on investigation find that by usage, the merchant on purchase of the rice has it re-coopered for shipping and is charged 14 cts. cooperage, though the planter may have but an hour before paid the identical cooper 11 cts for cooperage. If the rice is started for stowage on ship-board the charges are multiplied according to the annexed summary.

Cooperage on whole and half casks,	-	-	-	14 cts.
Cooperage and filling up	-	-	-	20
Starting into half casks,	-	-	-	100 per cask.
Starting into bags and sewing,	-	-	-	125

But this vampire list is not terminated—there is yet

Brokerage on whole casks,	-	-	-	12½ cts.
Brokerage on half casks,	-	-	-	6½
Marking whole and half casks and bags,	-	-	-	2
Drayage whole casks, 6½ at	-	-	-	12½
do. half casks, 4½ at	-	-	-	8½
do. in bags, 1½ at	-	-	-	2½

Wharfage whole and half casks, - - - -	4
do. in bags, - - - -	1

with the usual storage while awaiting shipment, of 8 cts. per week, on whole and half casks for the first week, and 4 cts. for the intermediate weeks.

Your Committee would add that a few years since, during the monetary expansion, the coopers published a notice, that in consequence of the high cost of living, materials, &c. they were compelled to raise the cost of cooperage from 7 to 11 cts. per barrel, at which price it now stands. Your Committee are of opinion that this state of things existing no longer, but being quite the reverse, and rice at a ruinously low price, the price of coopering ought to be restored to its former rates. Indeed the charges of cooperage on rice are preposterous—the barrels being first coopered at the mill, then a few hours after re-coopered on the wharf at 11 cents and sometimes, scarcely with removal, again coopered as the merchants property at 14 cts. per barrel—making a total of 25 cts. per cask, before getting on shipboard.

While presenting these impositions to your notice, your Committee would also recur to the inequality of price charged at the mills, and that received by the planter for barrels. The mill price being 87½ cents, and that received by the planter 50 cents, making a difference of \$37 50 on proceeds of 100 barrels rice. These evils require correction, and are respectfully submitted by your Committee, to the consideration of this Society.

EXPENSES ON COTTON.

The expenses on the cotton planter are not so oppressive; indeed the article does not admit of it; the charges are

Brokerage per bale, - - - -	12½ cts.
Marking, - - - -	2
Mending, - - - -	4
Do. and furnishing bagging and twine, - -	10
Drayage, - - - -	6¼
Wharfage, - - - -	4

Also the usual commission and storage, while awaiting shipment, of 8 cts. for the first and last weeks, and 4 cts. for the intermediate weeks.

The wharf owner makes an important deduction to the factor on the storage account—say 25 per cent. As the cotton and rice of the

planter furnishes this capital it admits of moral inquiry, whether, if this deduction can be afforded by the wharf owner the factor should not have the storage reduced to that amount and credited to the planter where it is justly due. These views are presented for the consideration and action of the Society.

EXPORTS OF RICE.

[The following account of the Exports of Rice from South-Carolina are copied from a recent "Memoir of the Introduction and Planting of Rice in South-Carolina: a description of the grass, and some account of the Exports, with an Appendix: prepared for the Agricultural Survey of the State; by R. F. W. Allston, of Prince George, Winyaw, Planter."]

From 1720 to 1729, inclusive, 264,788 barrels=44,081 tons.†
 " 1729 to 1730, " 419,525 " =99,905 tons.‡ §

From another source|| is obtained the following statement:—

				Casks.
Exports of Rice from the port of Charleston,				
So. Carolina, from Nov. 1724 to Nov. 1725,				17,734
From 1725 to 1726, from Nov. to Nov. -				23,031 "
" 1726 to 1727, " " -				26,884 "
" 1727 to 1728, " " -				29,905 "
				Barrels. Bags.
" 1728 to 1729, " " -				32,384
" 1729 to 1730, " " -				41,722
" 1730 to 1731, " " -				39,487
" 1731 to 1732, " " -				37,068
" 1732 to 1733, " " -				50,726
" 1733 to 1734, " " -				30,323
" 1734 to 1735, " " -				45,317
" " " " and				1,038 bags.

From the Commercial Column of the "South-Carolina Gazette."

		Price at last men-	
Exports from Charleston, So. Carolina,		Bbls.	Bags. tion'd period
From 1735 to 1736, - "		52,349	1,554
" 1736 to 1737, from Nov. to Nov.		42,619	519 £3
" 1737 to 1738, " "		34,324	
" 1738 to 1739, " "		67,117	40s.
" 1739 to 1740, " "		91,110	45s.
" 1740 to 1741, " "		80,040	2,137 55s.
" 1741 to 1742, " "		46,196	

† The weight of the barrel would seem to have been about 325 lbs.

‡ The weight of the barrel now " " " 400 lbs.

§ 2 Car. Col. p. 265.

|| From the French of G. M. B. Dumont, (1755,) furnished by the Hon. M. King.

From the Carolina Gazette.

			Price at last mention'd period.		
			<i>Bbls.</i>	<i>Bags.</i>	<i>per cwt.</i>
From 1742 to 1743, from Nov. to Nov.			73,416		40s.
" 1743 to 1744,	"	"	80,778		25s.
" 1744 to 1745,	"	"	59,627		17s. 6d.
" 1745 to 1746,	"	"	54,101		20s.
" 1746 to 1747,	"	"	54,146		46s.
" 1747 to 1748,	"	"	55,132		55s.
" 1748 to 1749,	"	"	41,034		
" 1749 to 1750,	"	"	48 011	525	
" 1750 to 1751,	"	"	61,522	223	37s.
" 1751 to 1752,	"	"	78,360	186	70s.
" 1752 to 1753,	"	"	35,522		45s.
" 1753 to 1754,	"	"	88,659		50s.
" 1754 to 1755,	"	"	96,778		40s.
" 1758 to 1759,	"	"	51,718		
" 1759 to 1760,	"	"	60,789	44	45s.
" 1760 to 1761,	"	to Oct. 10th,	101,359	74	37s. 6d.
" 1761 to 1762,	"	Nov.	79,642		30s.
" 1762 to 1763,	"	"	101,059	44	50s.
" 1763 to 1764,	"	"	101,842		
" 1764 to 1765,	"	to Sep. 14th,	107,292		50s.
" 1768 to 1769, 10th Oct. to 24th Aug.			116,715		65s.
" 1770 to 1771, 1st Nov. to 10th Oct.			130,500		

As follows:—

To Great Britain,	-	-	73,325
To Portugal,	-	-	14,439
To Spain,	-	-	1,760
To Italy,	-	-	222
For Foreign West India Islands,	-	-	975
To British	"	"	30,305
To Ports on this Continent,	-	-	9,665
In the year 1770, from the Colonies,			150,529—\$1,530,000*

From the Carolina Gazette.

			Price at last mention'd period	
			<i>Bbls.</i>	<i>per cwt.</i>
From the port of Charleston, S. Carolina,				
from 1772 to 1773, from 1 Nov. to 2 Aug.			112,649	£3 10s.
From 1773 to 1774, from 12th Nov. to				
7th Nov.	-	-	118,482	
From Beaufort, same time,	-	-	3,630	
" Georgetown,	-	-	2,964	
Crop of 1773 Exported,	-	Total,	125,076	

* Pitkins Statistics.

From Hunt's Merchant's Magazine, Vol. 9, No. 1.

				<i>Tierces.</i>	<i>Val. on ship-board</i>
In the year 1791, from the United States,	-			96,980	
" 1792,	"	"		141,762	
" 1793,	"	"		134,611	
" 1794,	"	"		116,486	
" 1795,	"	"		138,526	
" 1796,	"	"		131,039	
" 1797,	"	"		60,111	
" 1798,	"	"		125,243	
" 1799,	"	"		110,599	
" 1800,	"	"		112,056	
" 1801,	"	"		94,866	
" 1802,	"	"		79,822	
" 1803,	"	"		81,838	\$2,455,000
" 1804,	"	"		78,385	2,350,000
" 1805,	"	"		56,830	1,705,000
" 1806,	"	"		102,627	2,617,000
" 1807,	"	"		94,692	2,367,000
" 1808,*	"	"		9,228	221,000
" 1809,	"	"		116,901	2,104,000
" 1810,	"	"		131,341	2,626,000
" 1811,	"	"		119,356	2,387,000
" 1812†	"	"		77,190	1,544,000
" 1813,	"	"		120,843	3,021,000
" 1814,	"	"		11,476	230,000
" 1815,	"	"		129,248	2,785,000
" 1816,	"	"		137,843	3,555,000
" 1817,	"	"		79,296	2,378,001
" 1818,	"	"		88,181	3,262,697
" 1819,	"	"		76,523	2,142,644
" 1820,	"	"		71,663	1,714,923
" 1822,	"	"		88,221	1,494,923
" 1823,	"	"		87,089	1,553,482
" 1823,	"	"		101,365	1,820,985
" 1824,	"	"		112,229	1,882,982
" 1825,	"	"		97,015	1,925,245
" 1826,	"	"		111,063	1,917,445
" 1827,	"	"		133,518	2,343,908
" 1828,	"	"		175,019	2,620,696
" 1829,	"	"		171,636	2,514,370
" 1830,	"	"		130,697	1,986,824
" 1831,	"	"		116,517	2,016,267
" 1832,	"	"		120,327	2,152,631
" 1833,	"	"		144,166	2,774,418

*The year of the embargo.

† War with Great Britain.

The following statement of Exports from South-Carolina, derived from the journals of the day, is given from the year 1832, the period from which has been kept an account of the receipts of rice at the port of Charleston. The exports coastwise being rarely cleared, cannot with accuracy be given.

The foreign exports of Rough-rice are included in the foreign exports of tierces, at the rate of twenty-one bushels to the tierce,—and so with the exports coastwise.

From October to October.	Receipts. Tierces.	Foreign Exports.	Coast- wise Ex- ports.	City Con- sumption	Foreign Ex- ports of Rough Rice, bush'ls	Coastwise Exports of Rough Rice.
1832 & 1833	143,473	90,246	47,003	7,776		
'33 & '34	117,403	80,089	30,918	6,320		
'34 & '35	121,898	74,868	42,501	5,600	317,594	41,289
'35 & '36	133,633	79,007	47,226	6,200	356,752	63,235
'36 & '37	119,961	63,396	40,614	5,500	512,808	39,609
'37 & '38	90,384	51,514	30,837	6,600	336,442	44,732
'38 & '39	106,001	63,617	36,295	6,850	470,412	43,950
'39 & '40	107,108	68,795	31,591	6,800	431,306	10,342
'40 & '41	107,052	75,265	25,970	6,200	455,592	37,166
'41 & '42	118,004	75,739	34,174	7,200	445,685	15,770
'42 & '43	136,732	71,575	58,011	7,300	294,018	33,493

* This statement is furnished by Mr. J. W. Chesborough.

BLACK OAK AGRICULTURAL SOCIETY.

Several gentlemen, actuated by a laudable zeal to promote the agricultural interests of their neighborhood, by awakening a greater spirit of inquiry among themselves, and diffusing the result of their information throughout the State, associated themselves for these purposes during the past year, and organized a Society on the 10th February, 1842, under the title of "The Black Oak Agricultural Society." Samuel Dubose was chosen President; Isaac Porcher, Sen'r., Vice-President; and H. W. Ravenel, Secretary and Treasurer.

We were fortunate enough to be present in the spring, at the first annual exhibition, held by this Society in accordance with public notice previously given—and therefore now proceed, from our notes taken at the time, to give a detailed statement of the proceedings on the occasion, not having seen an account in any of our papers.

The weather, although not as genial as is usual at that season of the year in Carolina, did not prevent all those within a convenient distance from attending, who take an interest in the proceedings of an Association, having for its objects, those of such vital importance to our prosperity, as the improvement of the live stock of the country: the agricultural implements in common use among us—and the culture of the different productions of our soil.

The business of the Society commenced soon after 11 o'clock. The officers of the preceding year were re-elected with great unanimity, and many new members added to the roll.

In the course of the proceedings, much valuable information was elicited on many subjects of interest to the planter, but on none more so than on the subject of *marling*, by free conversations among the members, and an interesting paper read to the Society by Dr. John S. Palmer, founded on experiments made at *Mount Moriah*, Col. Palmer's plantation, in St. James', Santee—at *Lenud's Ferry*, Dr. R. M. Gourdin's plantation, in Georgetown district, and at *Ball's Dam*, Dr. John S. Palmer's plantation in St. Stephen's Parish.

As soon as this interesting paper was read, the Hon. Wm. Cain moved that a committee be appointed to wait upon Dr. *Palmer*, with a request that he would furnish, at his leisure, for publication, an abstract of the various experiments he had tried, and so eloquently reported to the Society, on the subject of marl.

Mr. John Harleston, of *Ellwood*, then made a valuable statement of his mode of planting corn, by which he had, in the last season, succeeded in making 49½ bushels to the acre. In the course of his remarks, he stated, that by the same process, pursued by him, his friend and neighbor, Dr. Benjamin Huger, of Richmond, on Cooper river, had made 63 bushels of corn off a single acre, and Dr. Moultrie, at the Bluff plantation, 50 bushels. Mr. Harleston was listened to throughout the whole of his report, with the greatest interest.

The following premiums were then awarded by the Society.

A premium for the best stallion was given to R. M. Deveaux, Esq. for his c. h. colt "*Hero*," by Bertrand, jr., out of Mania, by Figaro.

A premium for the best colt or filly, not over 3 years old, was given to R. M. Deveaux's brown colt, 2 years old, by Targin, out of the dam of Hero. For this premium, the following colts and fillies, which had many admirers on the ground, were also shown.

A bay yearling filly, by Bertrand, jr., out of Sally Butler, by Orville. Sally Butler was imported in 1837, the property of Mr. Henry Porcher.

A bay yearling colt, by Trident, out of White, the property of Mr. Dubose, and raised on his plantation.

A bay yearling colt, by a Nonplus colt, out of a common mare, belonging to Dr. Ravenel.

A grey yearling filly, by Trident, out of a Stamboul mare. Trident was by Bertrand—the property of Mr. S. G. Deveaux.

A bay yearling colt, a full brother to Hero, the property of Mr. R. M. Deveaux. This was an exceedingly pretty colt, showing already some capital racing points.

A premium for the best mule, not over 3 years old, native bred, was awarded to Mr. W. M. Porcher, for a mule 11 months old, by Warrior. Mr. Porcher also exhibited a two year old mule, by Macbeth's Don Juan. A premium for the best yoke of oxen was awarded to Mr. T. W. Peyre, who exhibited two yokes from the stock of the country.

Mr. Sinkler showed a very fine native cow from Gen. McPherson's stock, called the Pole Breed,—having proved her capacity to do

well on the ordinary fare of the country. She was unanimously awarded a premium by the Committee.

A premium for the best bull was given to Mr. R. M. Devaux's bull, by a full blood Durham, out of a common cow of the country. Mr. Sinkler also showed a yearling bull, out of a cow from Gen. McPherson's stock, by a native bull.

Several specimens of domestic cloth were exhibited, fit for the winter wear of the laboring negro, composed of cotton warp and woollen filling, such as are manufactured and used by the agriculturists in the neighborhood, on their several plantations.

For the best specimen of wool and cotton, a premium was awarded to H. F. Porcher, of Ophir, in St. John's. The premium for the best specimen of cotton, both warp and filling, was taken by Mr. Thomas Porcher, of White-Hall, in the same Parish (St. John's.) The prevailing opinion seemed to be, that the quality of cloth preferred by the negroes in this neighborhood, is made as follows:

4 lbs. cotton, spun in 6 hanks—each hank having 6 cuts; each cut having 100 threads. This constitutes the warp—the filling is 6 lbs. wool, spun in 6 hanks on the same reel, being a week's work for two negroes.

For the best Jackass, native or imported, a premium was awarded to Mr. T. W. Peyre's imported Jack.

Not the least interesting incident, connected with this occasion, was the gratifying circumstance of the presence of the venerable Major Samuel Porcher. Although the day was extremely inclement, nothing daunted by wind and weather, he mounted his horse and rode from his plantation ten miles to the place of meeting, adding in no inconsiderable degree, by his enlivening converse and exhaustless fund of anecdote and experience, to the interest and value of the day's proceedings.

We have been much struck, upon every occasion, that it has been our good fortune to meet this venerable gentleman, to see a display in him of those frank and amiable attributes, which we are told, has ever characterized him, and which impart such a peculiar charm to his old age. As he rode up to the muster-ground, his seat easy and graceful as that of a young man of 20—his black, *not grey* locks playing in the frosty air of the morning, it was a gratifying spectacle to us, as a stickler for the proprieties of life, to mark the evidently *habitual affection*—the kind greetings of his friends and neighbors tendered to him as he alighted from his horse, and also to observe even the strangers present vying with each other in evidencing by a deferential bearing in his presence, their full sense of the respect due to his many virtues and his many years.

Mr. Porcher has for years resided in St. Stephen's Parish, on his well appointed plantation known as Mexico—surrounded with every blessing that a bountiful Providence can bestow on the deserving, dispensing a paternal hospitality to all, who merit a place at his social board! No wonder then his grey hairs are honored, and his good qualities their own reward!

[Rambler.

NEWBERRY AGRICULTURAL SOCIETY.

Report of the Committee on Saving Pork and Curing Bacon.

Your Committee, after conferring together, came to the conclusion, that it would not be any thing amiss, to give some of our experiments in fattening of Hogs, before we undertake to make Pork of them; therefore, about the first of October, we put them in a Pea field that there is water in, if not so, minding to give them plenty, before we turn them in the field; we give them as much Corn as they will eat, and then a little every day. As soon as they have ate the Peas pretty well out of that field, put them into another until we wish to pen them; we then make close pens and floor them, and put them in; we shell the corn that we give them, and soak it from 12 to 16 hours. We keep salt pretty constant in their trough. By this plan we can fatten our Hogs on a great deal less corn, than to feed it dry. We kill our Hogs from the middle to the last of December, which is generally a favorable time for saving Pork. The day we kill we cut up and salt lightly down upon plank, which draws out a great deal of bloody water; next day we salt it over again and pack it down in tight hogsheads, minding to have every layer of meat covered well with salt, (and when we are salting, we rub the skin well;) we let it lay in salt about six weeks, we then hang it up and smoke it with green hickory wood, until we dry it properly. In the first of March, before the Skipper Fly makes its appearance, we take down the joints, and put them down in hickory ashes, (or any other good strong ashes;) the manner that some of us perform this process, is to take a large box or hogshead, sift ashes all over the bottom till you cover it, then put down a layer of hams, so as not to touch each other, then sift in the ashes, until we have filled up every crack; then we take sticks about the size of a common hoe helve, and lay across in order to keep the meat separate, and so on alternately, until we have filled our box, or put down what meat we have. By this method we can preserve hams as sound and as sweet twelve months, as they were the day they came out of the pickle.

Some of your Committee have tried rubbing the joints with ground (or pulverized) red pepper, with very good success. This is done before hanging them up. All of which is respectfully submitted.

MATHEW HALL, *Chairman.*

Mr. Editor,—The following was prepared for the *Newberry Agricultural Society*, in August 1842, but owing to the press of other matters, it was not read. I have to-day accidentally laid my hands upon it. I send it to you for the *Advocate*.

October 6th, 1843.

The undersigned having intended to compete for the prize for Wheat; but having by some strange mistake supposed, that the result of an acre was required for that purpose, when in point of

fact five acres should have been measured, ascertained alone the product of a single acre. But as he thinks his crop was improved by the mode of culture, he begs leave to state the same, and the result, so that if there be any thing of value in it, his brother farmers may have the benefit of it.

The first week in October, eighteen bushels, of Holland Wheat, and two bushels of Black Sea Wheat, well saturated with Blue Stone, were sown upon about twenty acres of land. Eighteen acres had been in cultivation, about eleven years. The other two acres were very old land. All of it was stiff red land. Upon the whole was sown Cotton seed, at the rate of about twenty bushels to the acre, except upon the two acres of very old land, upon that was sown about a wagon load of cotton seed, here the Black Sea Wheat was sown; the seed of it was mixed, and very inferior, having for the two preceding years had the rust. The whole was ploughed in, and then rolled. In February, five bushels of slacked ashes per acre, were sown upon the wheat. An acre of the Holland Wheat was selected and measured, it produced twenty bushels and one peck. The whole crop of Holland Wheat was two hundred and three bushels, and that of the Black Sea Wheat twenty-two bushels. The latter was not at all affected by the rust. The rest of the crop was slightly affected by it. Whether the exemption of the Black Sea Wheat from rust, this year, is to be ascribed to the large quantity of Cotton seed sown, will require further experiments to decide. The value of the dressing with ashes was very apparent, and I am persuaded double the quantity per acre would answer still better.

In December, I sowed a small quantity of Wheat, the toll of some ground for Col. Peter Hair. It was sown in Cotton ground. The greater part of the seed was rolled in wet lime so as to incrust the seed, as far as that extended, there was not the least smut.—Three or four lands were sown with the seed, without being rolled with lime, and they were full of smut. This little experiment goes far to show, that lime is an antidote to smut. The Wheat grew vigorously, and made an ordinary average crop of wheat for this section. I am persuaded, that a little attention to the culture of wheat will in a few years enable us to raise our average crops, from eight to twenty bushels per acre.

JOHN BELTON O'NEALL.

[*Temperance Advocate.*]

August 1842.

COTTON GIN:

The Tuscaloosa Monitor gives a description of an improved cotton gin, invented by a Mr. Kelly of Vicksburg, Miss., the right of which for this State has been purchased by Doctor Maclin. "The improvement (says the Monitor,) consists in attaching three

setts of grates and two stationary brushes, through which the saws pass in their revolution as closely as possible without friction ; in enlarging the brush wheel, if practicable to 18 to 20 inches diameter, and by boxing the same in an air-tight cylinder, except at and around the journals ; in attaching a moat board under the saws, beyond which they project through the long grates $\frac{3}{4}$ of an inch into the brush wheel cylinder." Cotton picked by the improved gin will bring a cent or more in the pound than other cotton. It would be highly beneficial to attach to common gins "a grated flue, from six to ten feet long, through which the dust that may pass the brush wheel, may fall in its passage to the pick room."

PRESERVING SWEET POTATOES.

We copy the following method of preserving potatoes, from the American Agriculturist's Almanac :—

"Select a dry place, level the earth, and lay a bed of dry straw so as to form a circle of about six feet in diameter. On this straw pile up the potatoes until they form a cone four or five feet high, over which spread a little dry grass. Then cover the entire cone with corn-stalks set up endwise, with the butts resting on the ground, and the tops reaching over the apex, of a sufficient thickness to conceal all of the potatoes. Then cover the whole pile with the earth at a depth of at least a foot, without leaving any air-hole at the top, as is frequently done. A small shelter should then be made so as to prevent the rains from washing off the earth. This may be done by inserting in the ground about the pile, four forked stakes, on which rails may be placed to support the covering, which may consist of boards, bark, thatch or other substances. Potatoes can be preserved in this manner until June, nearly as fresh as when first put up.

PREPARATION FOR WINTER:

With farmers it is important to have all necessary preparations for the hard weather that is approaching. It is as essential to save crops as to make them, and too often it is the case that gathering is delayed too long. Corn after maturity loses daily till housed.

Sweet potatoes should be put away before frost, and Irish potatoes are liable to injury after the cold sets in. Above all things, have preparations to shelter stock of every kind. Milch cows cannot be kept in good condition without protection from the pelting storms, and they will not give half the milk.

An open shelter, with a southern exposure, is easily constructed, and answers an admirable purpose. Sheep should have shelters where they can escape the cold rains, and lie down on dry places.

Hogs are the better to have protection from the rain. Care, however, should be taken that their sheds be kept free from wet straw, corn husks, or any thing that will induce diseases of the skin. It is important that their apartments have all the dust and litter scraped out every few days.

The secret of having stock in good condition through winter, is to have them fat at the start, and then commence feeding early, and be sure that they have regular attention, and are not suffered to fall off. One good animal well attended is worth more than two inferior ones neglected. A fat strong farm horse will do more work than two feeble, poor animals. Keep no more animals than can always be in condition, is the secret of success, and it is to be regretted few adhere to this rule.

[*Tenn. Agr.*

FARMERS' GARDENS.

In making a selection of a spot for a garden, the soil should be the main thing attended to in the outset; for though there is scarcely any spot that may not, by incurring the necessary expenses, be made productive, it is contrary to the principles of economy to select a cold, wet, hard, and retentive soil, for a garden, when one of a deep loamy nature can be procured without too much inconvenience. If the soil is not by nature suitable, it must be made so, or the attempt to have a good garden will be a failure. If it is too retentive of moisture, it is probable the quantity of clay in the earth is disproportionate, and thorough draining must be resorted to at once. If the soil is still too adhesive, and inclining to become heavy after rains, coarse sand may be put upon it till this tendency is overcome. It will not be enough, where a *good* garden is expected, to have the surface earth only rich and friable; it should be so to the depth of eighteen or twenty inches, or as low as cultivated roots usually penetrate. Where it is intended to occupy a piece of ground permanently for a garden, it will be poor policy in the end, to shrink from a thorough preparation of the earth at first. The difference in a single year in the amount of products, and the ease of working, will, in most cases, amply remunerate the extra labor and expense required in preparing rightly the soil.

When the earth is brought to be of the right kind, or is so naturally, the next thing is manuring. Here many farmers err materially. Manure for the garden should be either compost, or thoroughly rotted; and as free from seeds of all kinds as it can be procured. If of the proper kind in these respects, there is little danger of too liberal an application, or of making the ground too rich. Instead, however, of care in making or procuring proper manure, the custom is, when the season for ploughing the garden arrives, to go to the stable or barn-yard, and with the unfermented, unrotted manure of these places, to cover the earth as deep as it

can be conveniently ploughed. This practice is most disgusting and slovenly, and adds much to the labor required to make a good garden. It is disgusting, because rank unfermented manure is altogether out of place in a garden, and lessens the pleasures one should feel in cultivating such a spot; it is slovenly as no care can keep long manure from showing itself, when beds are made, and seeds planted; and from the seeds of grasses, weeds, &c., thus introduced the labor of keeping the garden clean, (and nothing looks worse than a garden filled with weeds,) will be four-fold to what it would be were proper manure or compost used.

In preparing the earth for the reception of garden seeds, there is no danger of making it too fine. In soils that are coarse, and not properly pulverized, the finer kind of seeds are with difficulty brought into contact with the earth, and frequently fail of germinating from this cause; and the seedsman is compelled to bear the blame that properly attaches to the imperfect preparation of the soil. There is another decided advantage gained in making earth fine. Its power of absorption is greatly increased, and when we remember that it is from the atmosphere that no small part of the nutrition of vegetables is derived the importance of exposing as large a surface as possible will be at once understood. This power of absorption may be increased indefinitely by pulverizing the earth.

There are few soils in which advantages is not gained by making the surface into beds previous to planting. There is a beauty in regularity and order, even in a farmer's garden, and the cultivation of all plants is much facilitated by method, in putting the seeds in the earth. A large proportion of garden esculents are more easily cultivated in rows, than when sown broad cast, or planted in hills; and in the preparation of the ground reference must be had to the quantity of ground required for each. In most soils seeds planted in beds are less liable to suffer from the heavy rains which frequently in the early part of the spring or summer, fall with such force and duration. But in whatever way seed are put in the earth, it must be remembered, that unless the ground is kept clean, stirred frequently, and kept rich and fine, no profit from the garden need be expected. With these things kept steadily in view, there is scarcely a possibility of a failure.

[*Genesee Farmer.*]

MONTHLY CALENDAR
OF
HORTICULTURE AND FLORICULTURE.
FOR DECEMBER, 1843.

VEGETABLE GARDEN.

Peas.—About the middle of this month you may venture to sow some Peas to succeed those planted last month. The early Carleton Pea seems to be the most hardy. Towards the end of this month, you may also sow Marrowfat. Where you wish to economize space in your garden, you may plant cabbages between the rows of your peas. For directions about the mode of planting, see last month. The Marrowfat, which grows very tall, should be planted wider apart from row to row, than the other kind, say 5 feet, and require sticking after they have come up about 4 inches above the ground. Let your Peas sown last month, have a little earth drawn up to their stems; and if the situation is much exposed, it would be well to shelter them from the Northern and Western winds, by sticking branches of pine around the beds.

Beans.—The winter Beans, as they may be called, the hardy Magazon and Windsor Beans, may be planted this month with some prospect of success, as in this climate they are not usually injured by frost. They should be planted from two and a half to three feet, from row to row, and 4 or 5 inches from each other in the row. You may hoe the Beans planted last month, drawing up in a dry day some earth around their stems.

Cabbages.—The Early York and Sugar Loaf Cabbages, which were sown early in October, will now be fit to transplant in the beds. The Early Yorks may be planted in rows about 2 feet from row to row, and a foot and a half from each other. The Sugar Loaf may be planted 2 feet every way. Where Cabbages, planted this month, are well manured, and carefully managed, they will produce fine heads in April.

Cauliflowers.—You may plant out those sown in October, let them be managed in every respect like the larger varieties of Cabbage; and if the frosts of winter are not too severe, and you take a little pains in sheltering them during our coldest weather, they may produce moderate sized heads in the spring. We, last year, made an experiment with the Cauliflower, in which we were pretty successful. After having planted our Irish Potatoes in rows; the Potatoes having been laid on the surface, strewed over with litter, and then covered with earth, formed a tolerable protection to the Cauliflowers planted between the rows.

The Cauliflowers which were put out in July and August, will be now preparing to head. It is a good protection to surround them by bands of hay or straw, care being taken that these are not drawn too tightly; by this means your plants will not only be protected from the frost, but the heads be whitened and appear attractive to the eye.

Radishes.—This as well as almost every month in the year, is suitable for sowing Radish seeds. In fact, in this mild climate, the Radish may be sown at any time. For direction, see those given in former months.

Lettuce.—Towards the end of this month you may sow Lettuce seed. Let the seeds be sown pretty thick and even, and in case of a frost they should be sheltered with pine and evergreen bushes.

Spinach.—Keep your beds of Spinach clear from weeds; let them be frequently hoed and thinned to within 4 inches of each other. In using Spinach, be careful in taking off the larger leaves not to injure the heart of the plant. With due caution, a bed of Spinach will last a family a whole winter.

Onions.—The Onions planted out in former months, should be kept free from weeds, and the ground be frequently stirred, as this will greatly promote their growth. It is not yet too late to set out new beds of Onions.

Carrots.—Towards the latter end of this month you may sow Carrot seed; the European kinds are least likely to run to seed.

Celery.—On a dry day earth up your Celery with great care, lest the earth fall into the heart of the plants and greatly retard their growth.

Artichokes.—If the Artichokes were not dressed last month, they should now be attended to. For directions see last month.

Ground Artichokes.—(*Helianthus tuberosa*)—This vegetable which has been too much neglected, may be dug this month. It is used for pickling, and is also of a pleasant taste as a vegetable boiled and mashed with butter.

Asparagus.—If you neglected, in the last month, manuring and dressing your Asparagus beds, let them be no longer neglected; your success with this vegetable next spring, will, in a great measure, depend on your fall dressing.

FRUIT GARDEN.

This is a proper time to prune Peach, Nectarine and Apricot trees. Remove all useless shoots, leaving the prime and bearing ones at proper and regular distances.

Pruning Vines.—Great precaution should be used in pruning Grape Vines. There is a great difference of opinion with regard to the proper mode of doing this: the usual plan is to head down young vines, the first year to within three eyes of the old,—the second year within 5 or 6. Old Vines should be shortened to within 2 or 3 eyes of the old wood; by this means young and fruitful shoots will be produced for the coming summer.

Planting of Vines.—At any time this month you may plant out Grape Vines. The young plants of not more than two years old are to be preferred. They should be set out 5 or 6 feet from each other, in holes 3 feet wide, and 18 inches deep.

PLANTING FRUIT TREES.

This is a favorable month for planting Peach, Nectarine, Apricot, Plum and Pear trees. We have usually trees imported from the South of France to succeed better with us than those from the North.

Raspberries.—You may transplant young shoots of Raspberries at any time in this month, and with proper management will bear fruit next spring.

Strawberries.—It is not yet too late to set out Strawberry Plants; but let the work be no longer delayed. For directions see last month.

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